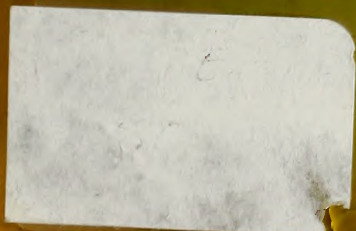




Colorado Oil Shale Industry

...situation ...
...complexities...
...industry direction...
...required actions...

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OIL SHALE OFFICE
CENTRAL

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D. Summary

I. Colorado Oil Shale Development - Present Status & Future Growth Implications

A. Lease Sales Signal Start of New Industry

U.S.D.I.'s Bureau of Land Management has a shale oil program. The record-breaking \$210 million bid of Gulf-Standard on January 8, followed by the February 12 \$117 million bid by a group consisting of Atlantic Richfield Company, The Oil Shale Corporation, Ashland Oil, Inc., and Shell Oil Company brought oil shale of age. This energy child of the environmental era now threatens to devour the parent.

Shale oil represents a paradox of meanings. In relation to the national energy dilemma, it is heralded by some as a panacea. And in respect to industry, local governments, environmentalists, and to BLM, shale represents a gargantuan headache in the area of planning, services and action vs. reaction.

Initial development, converting shale to oil, is slated to begin in the late '70's. What impact this development will have upon BLM poses more questions. There is no single, simple answer. No one really knows the wide-ranging scope or timetable of development. Because of this, it behooves BLM to move out now, to assert leadership and take firm command of a program which will have far reaching effect on the Bureau's image in the disciplines of land management.

Failure to act now will create yet another paradox. BLM will not have a shale oil program. Instead, the shale oil program will rule BLM.

The first step must be in accepting the realization that any program of the magnitude promised by shale oil cannot be looked upon as an isolated activity. All resources will feel its affects. To that end, Colorado State Office offers the following analysis of oil shale development and looks to the Department and Bureau for guidance and assistance in resolving the inevitable conflicts which will arise.

The location, quantity and quality of oil shale in the Piceance Creek Basin have been known since the turn of the century. The technical feasibility of large-scale development has also been generally recognized. But the ability of oil shale to compete with conventional energy sources in a competitive market has been under question and the willingness of industry to invest large sums of money in shale oil production had not been demonstrated until January 8, 1974. On that day the first

oil shale lease offer under the Departmental prototype program brought a high bid of 210.3 million dollars and signaled the start of a new industry in Colorado in which BLM is going to be heavily involved.

The lease sale was by no means the first indication of pending development, but it decisively answered the questions of timeliness and degree of industry commitment.

The birth of the industry is an accomplished fact and recent events indicate a rapid initial growth rate.

The size of the emerging industry and the impacts on the region and on resources administered by BLM can't be gauged by the scale and design of the two Federal lease developments alone. Four additional developments on private lands have been announced since the first lease sale. Each of these operations will be about the same size as the Federal lease operations and some of them will probably be in production before the Federal leases.

The existence of substantial private oil shale holdings in Piceance Creek Basin and the interest shown by a number of companies through involvement in core drilling programs, lease site nominations, bidding, and intensive studies indicate a high probability of additional operations in the near future.

In essence, we are faced with a full-scale development start-up rather than just two prototype leases.

Capital investment for the initial six operations will apparently be in the neighborhood of two billion dollars and over 12,000 workers will be employed when full production is reached.

Land values are not definitely known at this time but must be considered extremely high in view of the potential value of the in place shale oil, the bonus bids on the first offered tract, other mineral values, and the present and future uses of surface resources. Return to the government from the first lease offer will be between \$30,000 and \$60,000/acre from the bonus and royalties alone. This is about a dollar/square foot.

Associated pipeline and road developments will be of a magnitude comparable to the Alaska pipeline. Impacts on surface resources and uses will require major adjustments across the board. Land tenure adjustments and mining claim validity determinations will be called for on a greatly accelerated basis.

The presently known development programs and primary associated on-site and off-site activities requiring BLM involvement are outlined below.

B. Federal Leasing Program

1. Tract C-a - This lease was offered and sold to Standard/Gulf on January 8, 1974, for \$210.3 million. Estimated recoverable oil shale reserves within the tract are 4.07 billion barrels of oil in mineable beds containing 30 or more gallons per ton.

The preliminary development plan which we are now reviewing involves a combination open-pit and underground mine and an off-site processing plant. Average pit depth will be 1,000 feet. Indicated production capacity is 100,000 to 300,000 bbl/day. Work force estimates range from 2,000 to 4,000. Resulting population change assuming average family size of 2.8, normal increase in community services and associated construction, etc., would be at least three times the basic work force or 6,000-12,000.

Processed shale disposal (up to 5,000 acres) and water storage (up to 4,730 acres) are planned off-site in drainages near the lease tract.

2. Tract C-b - This lease was offered on February 12, 1974. The high bid was \$117.8 million which was offered by a group consisting of Atlantic Richfield Company, The Oil Shale Corporation, Ashland Oil, Inc., and Shell Oil Company. At the time of this writing, the bids have not been evaluated and no lease has been awarded. Estimated recoverable shale oil reserves within this tract are 3.5 billion barrels in mineable beds containing 30 or more gallons per ton.

The most likely mining method is underground room and pillar although in-situ retorting is a possibility. Underground mining will involve both on-site and off-site processed shale disposal sites and water storage sites. The processing plant would most likely be on site. Production capacity is expected to be in the 50,000 to 100,000 bbl/day range, and employment is expected to be between 1,000 and 2,000.

3. Title Clearance - Off-site facilities, for example see attached Illustration #1, and processed shale disposal areas associated with the Federal leases will require title clearance. Much of the involved area is covered by pre-1920 oil shale claims that the owners firmly proclaim are valid.

A recent decision by District Court Judge Finesilver in the TOSCO case has created an unanticipated workload in that we can no longer rely on old contest proceedings as a basis for determining validity of pre-1920 mining claims. Previously served interests in old contests will have to be served in all future contests. This will considerably increase the "search and service" job.

The judge also ordered us to present a plan within 90 days for the disposition of 16 patent applications. This will involve validity determinations on approximately 260 claims.

4. Oil Shale Environmental Advisory Panel - This panel, to be established by the Secretary, will be comprised of State, Federal, and private representatives. We do not yet know how involved it will be with day-to-day oil shale operations but do know that it represents another group with which we will have to coordinate our activities. Since it will be headquartered in Denver, we expect to be heavily involved in whatever work their charter gives them.
5. Core Drilling - The informational core drilling program under the prototype leasing program is about over. Of the 34 holes drilled under the program, 27 were in the Piceance Creek Basin in Colorado, 7 in Utah and none in Wyoming. The core drilling program serves as an excellent indicator of industry interest in various areas.
6. Environmental Studies - The joint Federal/State/Industry financed oil shale environmental studies are in the final contract year. The studies were designed to obtain additional data in the following areas:

Name of Study

Water Resources	U.S. Geological Survey
Revegetation and Rehabilitation	Colorado State University
Environmental Inventory & Impact	Thorne Ecological Institute
Regional Development and Land	Oil Shale Regional Planning
Use Planning	Commission thru THK Associates, Denver Research Institute, and Bickert, Brown, Coddington and Assoc.

Although the final reports are not completed, the interim reports indicate critical data gaps which should be filled before decisions are made on full-scale development. The

two-year contract period for the studies is simply not enough to find all the answers, particularly for studies concerned with revegetation and rehabilitation of mined lands.

A fifth study (actually an extension of the RD & LUP study) was recently added to the list to include planning for urban requirements prior to tax base build-up. This study was requested by Governor Vanderhoof in a letter to the Secretary after an interim report from the Regional Development and Land Use Planning Study indicated that the socio-economic impacts on the sparsely populated communities and towns in the oil shale region of Colorado would be severe.

Operations that have progressed to the preliminary design stage have all executed substantial contracts with environmental consulting firms to design and justify programs responsive to their development needs. The less advanced operations will undoubtedly do the same in the near future. The Federal Prototype Program lease terms require environmental studies to establish baseline data and detailed environmental monitoring programs. These numerous intensive study and design programs will require day-to-day BLM-Industry interface and parallel planning by BLM to assure area-wide coordination and consideration of alternatives of greatest long-term value to nonmineral interests.

7. Environmental Concern - Various environmental groups have taken an active interest in oil shale development, particularly in the Piceance Creek Basin. A representative of COSC recently testified before the House Mines and Mining Subcommittee on the state selection of oil shale lands in Utah. Colorado, with over 75, has more environmental groups than the surrounding states combined. Many of the groups are well organized, well informed and very effective in their operations. They have made it abundantly clear that they will continue to monitor oil shale operations and will use injunction proceedings when they feel violations are being made. In effect, we are operating in a "fishbowl" where mistakes will be easily seen and severely criticized. Development of an oil shale industry will depend largely on our ability to communicate with this segment of the public.

C. Private Land Oil Shale Developments

1. Colony Development Operation has announced plans to go into commercial production on patented lands near their "semi-works" plant on Parachute Creek near the southern edge of Piceance Creek Basin. An underground room and pillar mine and surface retort using the "TOSCO II Process" is planned.

Production capacity will be in the 50,000 to 150,000 bbl/day range. They expect to employ about 2,500 workers. On-site surface disposal of the processed shale is contemplated. They expect to be in production before 1980. Colony has announced plans to construct a company town that will accommodate 5,000 people near the existing town of Grand Valley. We are currently negotiating with them on an exchange proposal and a pipeline right-of-way application.

2. Union Oil Company has announced plans to develop a commercial operation of about the same type and scale as Colony in the same vicinity.
3. Superior Oil Company plans to develop a combination oil shale-Nahcolite-Dawsonite operation on the northern edge of the basin as soon as they are able to consolidate their land holdings through an exchange they are proposing. The scale would be similar to Colony and Union but employment would be less and all processed shale would be backfilled into the mine voids. They claim they can mine the shale without disturbing the large zone of saline water in the Basin.

They have a field office in Meeker near the development site and are actively engaged in predevelopment engineering and negotiations on land exchanges, etc.

4. Occidental Oil Shale, Inc. is actively engaged in a pilot operation on a 4,300 acre patented tract in the Roan Creek drainage near the southern edge of the basin. They have stated publicly that they expect to go commercial on this tract if they are unsuccessful in acquiring a Federal lease. They have an unique in-situ process that involves limited underground mining, requires practically no water, produces surplus electrical power and requires very little surface disposal of mine waste (no processed shale disposal). They are currently negotiating with the Grand Junction District Manager for an all-weather road to their operations.

5. Other Activities

- a. Marathon Pipeline Company plans to file an application for an oil pipeline right-of-way for transportation of "stiff crude" from a plant site in eastern Utah north-east through Colorado to Guernsey, Wyoming. In our pre-application negotiations with them, they have stated that the pipeline will be extended into the Piceance Creek Basin for transportation of shale oil when the demand is sufficient.

- b. The Bureau of Mines' Anvil Points oil shale research facility is active again. Fifteen major oil companies have contributed \$500,000 each to share in a demonstration program known as the Paraho Oil Shale Project. It involves testing the applicability to oil shale extraction of a retorting process used in calcination of limestone. The eventual target of the program is the rich oil shale deposits in Colorado, Utah and Wyoming.
6. Private Ownership - There are 214,440 acres of land in the Basin owned by various oil companies. Listed below are the largest holdings (excluding the 4 companies discussed above) which may enter the development picture in the near future, although no public announcements have yet been made.

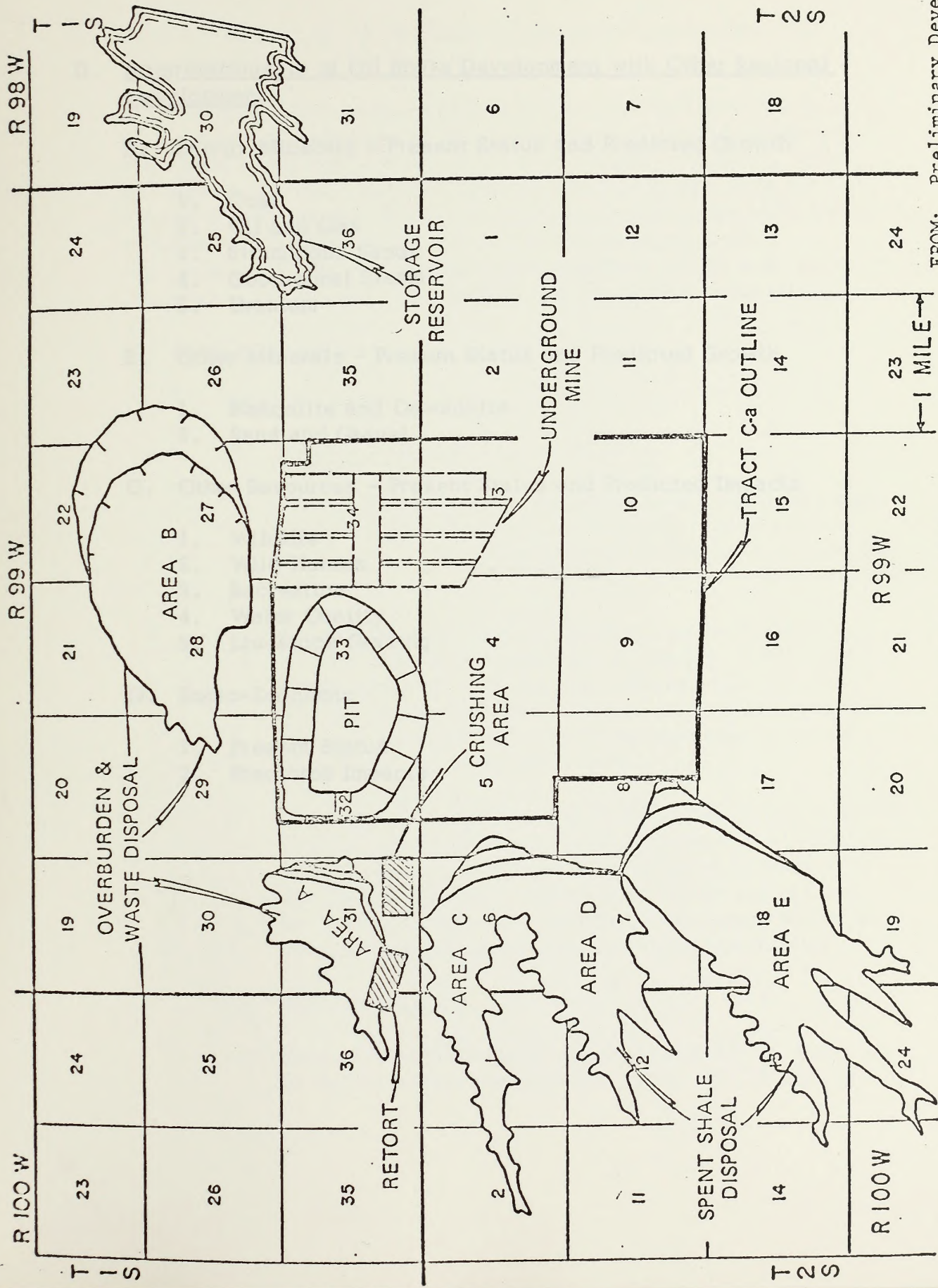
Standard Oil of California	41,000 acres
Texaco	19,000 acres
Getty (Tidewater)	24,000 acres
Mobil	19,000 acres
Sohio	9,600 acres
Exxon	10,500 acres
Continental	10,200 acres
Cities Service	9,000 acres

D. In summary, the current oil shale picture in Colorado is this:

1. The oil shale reserves of the Piceance Creek Basin will be the first to be developed by the emerging oil shale industry.
2. We are dealing with much more than a prototype program since there is tremendous interest by industry in developing both Federal and private holdings in the Basin.
3. Impacts and workloads, including mining claim title clearance, will stem from operations on both Federal and private lands since 75 per cent of the lands in the Piceance Creek Basin are managed by BLM.
4. There is deep citizen and political concern regarding environmental and socio-economic impacts resulting from oil shale development.
5. Additional research needs to be done to fill data gaps identified through ongoing studies.
6. Industry is testing the feasibility of several types of extraction methods, some of which may facilitate shale

oil production at a faster rate than anticipated (Paraho process). New technologies will require greater evaluation expertise.

7. Development of the industry will depend largely on our effectiveness in working with environmental groups, advisory panels, state and local governments, other agencies, and industry.



FROM: Preliminary Development
Plan submitted by Standard/Gulf
ILLUSTRATION #1

PRELIMINARY PLAN OF DEVELOPMENT
TRACT C-a

PLAN OF OPEN PIT/UNDERGROUND COMBINATION MINING SCHEME

II. Interrelationship of Oil Shale Development with Other Regional Development

A. Energy Minerals - Present Status and Predicted Growth

1. Coal
2. Oil and Gas
3. Bituminous Sands
4. Geothermal Steam
5. Uranium

B. Other Minerals - Present Status and Predicted Growth

1. Nahcolite and Dawsonite
2. Sand and Gravel

C. Other Resources - Present Status and Predicted Impacts

1. Wildlife
2. Wild Horses
3. Recreation
4. Water Quality
5. Livestock Grazing

D. Socio-Economic

1. Present Status
2. Predicted Impacts

II. Interrelationship of Oil Shale Development with other Regional Development

In order to fully comprehend the impact of oil shale development, it is necessary to recognize its relationship to other development activities in the northwestern part of Colorado. Oil shale cannot be developed independently. Orderly and timely development will depend greatly on meshing oil shale development needs with those of other minerals and resources. The following illustrates the more important regional activities and programs which must be included in the development planning of an oil shale industry.

A. Energy Minerals

1. Coal

a. Present Situation

There are presently eight active producing coal mines in the northwestern area of Colorado. These mines produced approximately 2.8 million tons of coal in 1973.

About 90% of the coal production was from the four surface coal mines operating in the Mt. Harris-Oak Creek Areas of Routt County. Essentially, all the surface mined coal was used for electric power generation. A small part was used commercially in sugar plants and for other minor uses.

Underground mines are operating at Oak Creek in Routt County, about 81 miles south of Craig and at Axial in Moffat County, and about 9 miles north of Meeker in Rio Blanco County. Underground mined coal is used for various purposes--electric power generation, commercial heating processes, and domestic heating.

b. Predicted Growth

Rate of coal production from NW Colorado is expected to double within the next two years. By 1980, coal

production should be about six times as great as the 1973 production.

Most of the immediate growth within the next two years will be concentrated in the presently active surface mining area between Mt. Harris and Oak Creek. It will consist of extending and expanding existing surface mines. Major growth beyond two years will spread westwardly along the Williams Fork Mountains in Routt & Moffat Counties and then southwardly to the Nine-mile Gap Area in Rio Blanco County.

A large new surface coal mine (production 500,000 tpy or more) will be developed south of Hayden in 1976-77 to supply coal to the Hayden Power Plant addition. Construction will start in 1975 by Utah International on a new power plant and large surface coal mine about six miles south of Craig. Coal production is expected from large new surface or underground or combination surface-underground mines in the Axial-Ninemile Gap Areas before 1980. Most of the early increased production from the Axial-Ninemile will probably be shipped for out of area powerplant use. However, since this area contains huge reserves of good quality coal, it seems reasonable to expect plans before 1980 for power generation or perhaps even coal conversion in the Axial-Ninemile Area.

New coal production of up to 3/4 million tons per year is expected from new medium speed (production 500,000 tpy or less) underground mines in the Cameo Area, Mesa County, about 15 miles east of Grand Junction by 1980. One new mine at Cameo is being developed, but has produced no coal to date.

Development of several coal leases north and east of Rangely is also expected by 1980. Coal will be underground mined and will probably supply a medium size electric powerplant that has been considered for the mine location along the White River.

Some increase in the number and production of small underground mines (production 50,000 tpy or less) in NW Colorado is expected. No specific new proposed sites are known at this time.

The following table gives projected coal production for NW Colorado through 1990:

<u>County</u>	<u>Million Tons Per Year</u>			
	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>
Routt	5.1	7.3	11.0	13.0
Mesa	0.2	0.7	1.0	1.4
Moffat	0.5	7.4	7.9	8.3
Rio Blanco	<u>0.2</u>	<u>3.7</u>	<u>8.4</u>	<u>9.2</u>
Total	6.0	19.1	28.3	31.9

Thick beds of lower grade coal north and west of Craig are not being developed at the present time. Plans to develop this coal are not known at this time; however, there may be considerable surface mineable reserves in the area, and it seems probable that great interest will develop prior to 1980. These and all other coal reserves in NW Colorado would be considerably more valuable if a railroad spur line were extended southwardly from the U.P.R.R. line at Creston Junction, Wyoming. The development of oil shale, Nahcolite and Dawsonite in the Piceance Basin will undoubtedly accelerate the plans for such an extension.

The anticipated growth will greatly increase exploration, development drilling, and road building.

2. Oil and Gas

a. Present Situation

There are 675 producing oil and/or gas wells in the area, comprised of Routt, Moffat, Jackson, Rio Blanco and Garfield Counties.

These wells are producing 20 million barrels of oil and 26 million cubic feet of natural gas yearly. Approximately 63% of the oil and 84% of the natural gas is produced from Federally owned petroleum resources. The oil production amounts to approximately 50% of that produced in the entire State of Colorado. Active seismic operations for oil and gas are being carried on with 300 miles of new trails having been constructed during the past year. There have been 150 drilling plans received during the past year.

b. Predicted Growth

The increasing number of notices of intent to conduct oil and gas exploration (seismic) and drilling plans received are clear indications of expanding interest in this area for oil and gas development. It is reasonable to expect a 10% increase in oil and gas activity per year in this area for at least the next few years.

It can be expected that projects similar to Rio Blanco for gas stimulation will be accelerated. Although there is no positive indication at the present time that such tests will result in increased production of natural gas, the impacts of the projects are present and will increase. If the tests are successful, the impacts will be even greater.

3. Bituminous Sands

a. Present Situation

Preliminary geologic investigations have delineated several areas of NW Colorado, which are potentially valuable for bituminous sands. Most of the deposits are along the Grand Hogback and the Danforth Hills, and are low grade.

There are no known valuable deposits, and there is no known present interest in developing the deposits.

b. Predicted Growth

As technology is developed and petroleum resources are depleted, development of bituminous sands will become a reality.

4. Geothermal Steam

a. Present Situation

Three areas in NW Colorado have been designated as potentially valuable for geothermal resources. One is the Juniper Springs area along the White River in Moffat County. The other two are in Routt County, at Steamboat Springs and between Milner and Mt. Harris.

b. Predicted Growth

The 64 applications for geothermal steam leases which we recently received is a clear indication of the accelerating interest in this resource in Colorado. Interest will increase, and this area is a prime target.

5. Uranium

a. Present Situation

At the presenttime, we have 45 applications for prospecting permits to explore for uranium and associated minerals (gold, platinum, silver, etc.) on acquired lands in this area.

b. Projected Growth

Since uranium has been discovered in this area, although not developed, we can expect an increase in activity as the building and operation of nuclear plants increases. It is predicted that the building of such plants must increase to meet the energy needs.

B. Other Minerals

1. Nahcolite and Dawsonite

a. Present Situation

Interior has issued 4 sodium leases and has an additional 4 lease applications pending, covering these minerals in the Piceance Creek Basin. The leases are within three miles of oil shale lease C-a and about 10 miles from oil shale lease C-b. The lessee is conducting economic, mining, processing and market studies and has definite plans for development of the leases at this time. No work is being done on the lease lands, but the lessee contacted this office recently regarding permits needed for exploratory and development work.

It has been reported that Superior Oil Company will produce nahcolite and dawsonite in their private land oil shale development.

b. Predicted Growth

As the use of coal increases, the development of the nahcolite can be expected to increase for its use as a stack scrubber in pollution control.

Since we currently import 90-95% of our aluminum, the development of dawsonite is expected to become critical. Indications are that foreign exporters are possibly thinking strongly about taking the same line as the foreign oil producers have recently taken. This would accelerate the development of dawsonite.

2. Sand and Gravel

a. Present Situation

High demands are being put on sand & gravel, especially in Rio Blanco County where sources are scattered, and in

short supply. Several of the known sources are situated on national resource lands. Rio Blanco County has applied for a site on the White River where they propose to excavate 100,000 cubic yards of gravel. The Town of Rangely has been granted a permit to excavate gravel immediately east of the townsite. Several other counties (Moffat, Grand and Jackson) have expressed interest in obtaining permits to excavate or establish pits on national resource lands.

b. Projected Growth

As the development of the previously discussed mineral resources increase, the demand for sand and gravel will increase in like proportion. Delineation of sites for obtaining this resource will become more critical.

C. Other Resources

1. Wildlife

a. Present Status

A wide diversity of wildlife inhabit the region, including mule deer, elk, buffalo, sage grouse, bald and golden eagles, prairie and peregrine falcons, sandhill cranes and sage grouse. The mule deer herd in the Piceance Creek Basin is estimated at 20,000 and is the largest wintering deer herd in North America. At the present time, hunter expenditures, mainly for mule deer, are a primary source of income for Rio Blanco County. The deer herd attracts nationwide interest as evidenced by the fact that the area experiences around 27,000 hunter days with hunters representing 28 different states.

The buffalo herd in the basin is managed by the Colorado Division of Wildlife on an experimental basis at the Little Hills Experimental Station.

b. Predicted Impacts

Major public concern is for the future of the mule deer herd. Elimination of winter habitat, as well as increased human activity, will adversely affect the herd and the economic base it now provides. Other wildlife in the region will be similarly affected.

2. Wild Horses

a. Present Status

There are about 175-250 wild horses in the Piceance Creek Basin. The horses range from Cathedral Bluffs to Rocky Ridge near the White River, an area of about 200 thousand acres. Passage of the Wild and Free Roaming Horse and Burro Act restricts gathering and use of the animals, thereby allowing a 25-30 per cent annual increase in the size of the herd.

b. Predicted Impacts

The law requires that the animals be protected. This may require that an area be set aside for their use and/or that some be transferred to other areas if their numbers increase beyond habitat capability. The increase in human activity in the area will adversely affect the free-roaming nature of the animals.

3. Recreation

a. Present Status

The most significant recreational value in the region is big-game hunting, mostly for mule deer and elk. Other recreational opportunities include fishing, bird hunting, skiing, snowmobiling, rockhounding, sight-seeing, and dude ranch activities. Archaeological ruins have recently been identified in Piceance Creek Basin but are not considered significant finds at this time.

b. Predicted Impacts

The quality and ultimate value of the areas rich complement of recreational opportunities will be adversely affected by increased mineral development, increased population, etc., unless a comprehensive minerals development and monitoring plan is established to mitigate damages. Water quality, availability of food and people control will be particularly important in retaining the recreational advantages of the area.

4. Water

a. Present Status

The region is noted for its clear streams which provide high quality water for various purposes, such as domestic use, power generation, agriculture, recreation, fish habitat and industry. The Colorado and White Rivers are the main drainages of the region and are of the greatest concern as regards oil shale development. At the present time there is an excess of water in relation to use but this could change drastically as mineral development accelerates. The potential for water degradation through oil shale development was one of the most frequently attacked subjects in the Oil Shale Environmental Impact Statement.

b. Predicted Impact

The long-term effect of industrialization in the region will cause a general decline in water quality with impacts focused on the White and Colorado Rivers in Colorado. The degree of severity cannot be quantified at this time but will depend heavily on continuing research and monitoring. In addition, there will be increased competition for use of water due mainly to development of oil shale. The industry will require large amounts of water to produce shale oil (3-6 gallons per barrel), plus additional amounts for power generation, spent shale disposal and revegetation efforts. At the start, most of the water for shale oil production may be supplied by underground aquifers but in the long run surface water will have to be diverted. A scramble is already on in Colorado to develop water for oil shale production.

5. Livestock Grazing

a. Present Status

Both cattle and sheep are presently utilizing the area. The livestock industry presently constitutes a major portion of the ^{economic} base of the area. Many families are dependent upon it for their livelihood. In the Piceance Creek Basin alone, 11,305 cattle and 12,524 sheep graze national resource lands.

Privately owned lands are gradually being acquired by major oil companies primarily to obtain water rights and access. The acquired land is being leased back to the rancher until they become necessary for oil shale development.

b. Predicted Impacts

Livestock grazing will be reduced in the region as oil shale and other minerals are developed. Presently operating ranches may literally be "dried up" when oil companies exercise their water rights for oil shale development.

D. Social and Economic Impacts

1. Present Status

Energy development is expected to create substantial impacts in seven northwestern Colorado counties. They include Eagle, Garfield, Mesa, Moffat, Pitkin, Rio Blanco, and Routt. Additional impacts will occur in Delta and Mesa Counties as a result of expanded coal mining in Delta and Gunnison Counties. In this region BLM manages 38% of the total land area. Federally-owned lands total approximately 66% of the total area.

As the enclosed county data sheets (Appendix 1) indicate, the recent history of the region involves population decreases in the flatter areas with rapid population growth in the mountainous recreation-resort counties. Current indicators suggest a reduction in growth of the major recreation areas, and a slowing of tourist related activity and income in the other counties as the "energy crisis" becomes more severe.

In the seven-county Northwestern region, the 1970 population was 100,837, an increase of 15% over 1960. While the proportion of families with incomes under \$5,000 was about the same as for the State (24.6% vs. 24.3% for Colorado) and the proportion of families under the poverty level was slightly lower than for the State (10.2% vs. 11.2% for Colorado), only 25.5% of the families, within the region, had incomes over \$12,000 in comparison with 41.9% for all of Colorado. These regional averages are increased noticeably by a smaller number of higher income families residing in the resort areas.

Over the past 20 years the dependency of the area on agriculture as a source of employment and income has decreased substantially. Mining as a source of income and employment has decreased slightly and current projections of the mining sector indicate that mechanization will counter-balance increased production over the next year or two to provide few additional jobs and only modest increases in income.

The following data is indicative of the transformation of the regional economy from its earlier agricultural and mining base to the "service" role played now in supporting the recreation and tourism activities that have captured the pocketbooks of the local people and the attention of the skiers and other recreationists all over the country (at Vail, Aspen, Snowmass, Steamboat Springs, etc.).

Northwestern Colorado Employment and Rank by Sector
(1970 Data)

1. Services	8284;	21%
2. Retail Trade	6906;	18%
3. Construction	3636;	9%
4. Agriculture and Fisheries	3423;	9%
5. Public Education	2852;	7%
6. Manufacturing	2527;	7%
(Furniture and Lumber Manufacturing - 187)		
(Food and Kindred Prod. Mfg. - 368)		
7. Transportation and Communication	2141;	6%
8. Public Administration	1987;	5%
9. Mining	1860;	5%
10. Finance, Insurance, and Real Estate	1481;	4%
11. Wholesale Trade	1238;	3%
12. Utilities	1046;	3%

As this summary data suggests, retail trade and other services presently account for a major portion of the income and employment in the region. Construction activities are based both on the building associated with the recreation-resort areas (condominiums, mountain homes and new stores, etc., in the principal resort communities) and the pivotal role that Grand Junction plays as the trade center for western Colorado and eastern Utah. Manufacturing in Grand Junction has increased somewhat over the past decade. The low rank of the wholesale trade sector is indicative of the fact that the region depends on Denver, Salt Lake and other major cities for primary, wholesale-supply activities.

Some parts of the region have become retirement home areas for persons from outside the region as well as "havens" for those rural Coloradans pushed from the recreation-development areas, either because of the associated higher living costs in the resort areas or their preference to live in quieter rural communities.

Looking briefly at existing institutions and their manifestations in social capital, data indicates that while some construction of roads, schools, and other public facilities is occurring, the rate is about that of meeting short-term needs, as seen under existing trends. While the desire to attract "any industry" or almost any economic activity is apparent at some Chamber of Commerce type meetings, State and local attention has turned to limited concern about too-rapid growth and the development of laws and institutions to control and regulate growth. Most counties are now members of Regional Planning Commissions or Councils of Government. Also, most counties have county planning commissions. The competence and acceptance of these planning organizations varies from county to county. Zoning and other land use regulations generally exists but varies from county to county in its state of implementation. A number of Federal agencies are currently evaluating their possible roles in community and regional development in this area as evidenced by the enclosed newspaper article (Appendix 2).

To summarize, the history of the region is heavily tied to the agricultural and mining activities of the past. Mechanization has reduced the dependence on these sectors while a new recreation-tourism industry has grown up and attracted regional and national attention. Immigration of new people, new interests and Grand Junction's growing role as a regional trade and travel center have dominated the recent past.

2. Predicted Impacts

Proposals involving four oil shale processing plants on private lands, two oil shale operations on the prototype tracts plus related pipelines, roads, and other support facilities are now being discussed.

The work force needed to construct the four private processing facilities is estimated to be about 5000 people. Since an estimated one-fourth or less will be local people, an estimated 4000 construction workers will be imported to construct the processing plants and equipment. Including families and necessary service personnel, the total population increase is expected to range upward to 8000 people and possibly to 16,000 people, depending upon the distribution of the impacts. If new communities are planned and developed, the higher estimate appears more realistic since the new communities will require construction of new housing, new sewers, streets, etc.

If the population is distributed among existing towns (Grand Valley, Glenwood Springs, Rifle, Grand Junction, DeBeque, Meeker and Rangely) the requirements for new facilities will be less severe as existing facilities are extended to accommodate the new people.

Preliminary information regarding development plans for the two prototype lease sites suggest a need for about 3000 construction workers, with a total immigration of from 6000 to 12,000 people.

During the construction phase, a total of 7,000 construction workers will be needed. Their dependents and related service personnel are expected to increase the total population from 14,000 to 28,000 people, depending upon the type and phasing of the construction stage. Additional construction activities are anticipated in connection with the expansion and development of coal-fired steam generating plants and for coal gasification plants.

During the mining-plant operation phase, an estimated 4000 workers will be needed to operate the four private facilities while an estimated 3600 workers will be needed for the operations on the two prototype facilities. Including their families and the associated service personnel the "plant operation" phase population impact will swell to about 25,000 new people or more.

Estimates of population growth for a long-term, full scale oil shale industry range to over 160,000 people. This latter estimate would require the development of major support industries within the region as the economy grew and became less dependent on other regions.

Oil shale development would first and easily change the currently declining agricultural and mining based economy to an energy-mining based economy'. While the recreation-tourism industry would continue to exist, tourism would likely be adversely affected if the region lost its rural, scenic charm.

Growth of existing or new communities would likely strengthen Grand Junction's role as a regional trade center, expanding the number and variety of services, facilities, products, etc., produced and offered.

The major impacts of oil shale development would be on the people and institutions now in the region. Construction of housing for construction and mine-operation workers would be a first order of business. Existing local firms, building trades workers and inventories of building materials

would likely be inadequate. Sources of financing for the building phase would also likely be inadequate and require support from outside institutions or from public funds. The base facilities in the several area communities would likely be inadequate to meet growing demands for sewer, water and other public facilities. Sources of funds for these public facilities would also need to be developed, before the accompanying tax base grew adequately to provide for them.

The impacts on some local and regional firms ranging from materials suppliers to land speculators would no doubt be positive (in their view) yet costly to the new workers and their families. Considering the number of new people moving into the area, it is doubtful that services or facilities would be adequate to meet needs, at acceptable levels of quality. Some of the conditions might even be reminiscent of Gold Rush towns. Many people who had lived in the area, providing a major cultural resource and source of continuity and stability to the region would likely leave as have many from the Aspens, Steamboats, Vails, etc.

In spite of the need for comprehensive planning by all counties in the region, present evidence suggests a fragmented "can't-wait" approach based on speculation rather than solid information.

In conclusion, the magnitude of the combined Oil Shale and Coal related developments will spill into the very areas and towns now dominated by the recreation-tourism industry as well as the little agricultural and mining towns located along the Colorado, Gunnison, White, and Yampa Rivers.

In view of the potential development and related impacts, two facts are apparent. A complex problem of considerable magnitude is developing. An opportunity and an obligation to exercise a responsible role in coordinating the development of a now-sleepy region also exists. Recognizing and grasping this opportunity for a responsible and helpful role is our choice.

III. Development Needs

A. Surface Transportation

1. Roads
2. Access
3. Rail

B. Power Transmission Lines

C. Water Facilities

D. Product Transportation (Pipelines & Markets)

E. Space for Industrial & Urban Development

F. Research, Modeling & Monitoring

III. Development Needs

A. Surface Transportation

1. Roads

The oil shale region is not a roadless area, but all weather roads are scarce. The net of graded roads and unimproved trails which afford vehicular access to the public lands evolved to serve pastoral uses and oil and gas exploration. Most of those are available for public use only by sufferance of private landowners who actually own a small percentage of the total land area.

2. Access

Commercial development of oil shale and/or associated sodium-aluminum minerals will require much more sophisticated legal access. Gulf-Standard has tentatively proposed an all-weather 4-lane highway to tract C-a. The nearest existing 4-lane highway is Interstate 70 at Rifle, some 60 miles to the southeast. Existing arterial roads in the area are S-13 from Rifle to Meeker and Craig, S-64 along the White River, and S-139 from Grand Junction to Rangely. None of these are adequate for heavy industrial or commuter traffic. Even with existing light traffic, winter deer kills on S-13 are among the highest in the State.

3. Rail

Rail facilities may be required to import heavy equipment and construction materials for oil shale development. If available, unit trains would be a viable alternative for transportation of shale oil, sodium minerals, crude petroleum, and possibly alumina (from Dawsonite).

Nearest rail facilities are the Denver and Rio Grande at Rifle to the south and Craig (spur line) to the north. There is a plan to extend an eleven mile rail spur south from Craig to serve the Yampa Project proposal (coal mine and power plant). Another less definite proposal involves a new rail line from Rock Springs, Wyoming (Union Pacific or Burlington Northern RR) to existing coal mines between Craig and Meeker, Colorado. Such a line could be readily extended to serve oil shale and associated minerals development in Piceance Basin, as well as the extensive "stiff crude" reserves and possible oil shale development near Vernal, Utah. Full scale development of mineral resources in the oil shale region would likely require one or more commercial airports.

B. Power Transmission Lines

Heavy industrial development or establishment of new towns will require rights-of-way for new large KV power lines as well as lower voltage distribution lines in the oil shale region. It is also possible that significant amounts of electric power may be generated in the area by use of shale oil as fuel for thermal power plants, or as a by-product of oil shale retorting. Those power lines must be integrated with the presently growing net of power transmission lines in northwest Colorado.

C. Water Facilities

Water needs and problems associated with oil shale development are largely undefined. However, known or proposed industry action indicate some very substantial water works are anticipated; for instance:

- Getty Reservoir No. 2 is the subject of a pending right-of-way application near DeBeque, Colorado. The proposal includes about 6 miles of 42-inch pipeline to divert Colorado River water into a 400-acre lake.

- Colony Development Operation claims large water storage rights in both Ruedi Reservoir on the Roaring Fork River and Green Mountain Reservoir on the Blue River. Discharge from either reservoir could flow down the Colorado River to a point of diversion at Rifle or Grand Valley; but would require miles of pipeline and several thousand feet of lift for use on Colony's fee lands near the head of Parachute Creek.

- Gulf-Standard are doing preliminary engineering for a 4,730 acre reservoir in Yellow Creek with pipeline connections to Tract C-a mine and shale disposal operations. Preliminary data indicates a storage capacity of 460,000 acre feet.

- U. S. Bureau of Reclamation has cranked oil shale development water requirements into their justification for several proposed storage projects, e.g., Lower Yampa near Maybelle, Colorado, and Yellow Jacket on the upper White River.

D. Product Transportation

Markets for shale oil and other mineral or energy resources are largely external to the oil shale region. In addition to possibilities for surface transportation of products, major pipeline systems will be required to get liquid and/or gaseous

products to market. Likely corridors for product pipelines seem to be north and east across Wyoming to midwestern markets; southwest to the 4-Corners area and thence to southwestern or eastern markets; or west to Salt Lake City and the Great Basin.

E. Space for Industrial and Urban Development

Mineral development on leases or fee lands cannot be fully self-contained. Mining overburden and spent shale will have to be deposited somewhere. Likewise, land tenure will be required for plant sites, urban expansion, new town development, communication facilities, airfields, solid waste disposal, sewage treatment plants, other public facilities and land boundary adjustments, and a host of other surface uses. Companion requirements will be physical identification of land boundaries, supplemental monumentation to assure perpetuation or restoration of those boundaries, and mining claim title clearance.

F. Research, Modeling and Monitoring

It seems amply clear that the American public will not tolerate creation of a "Western Appalachia". If major development of oil shale and associated minerals occurs within any time-frame, base line studies, basic research, modeling, and monitoring must precede and accompany that development. These scientific and/or academic exercises will be necessary not only to obtain clearance for proposed actions; but to evaluate the Prototype Program results, guide subsequent oil shale leasing policy and scheduling, and assure that the end results do not reflect mismanagement.

- ### C. Compliance Supervision

IV. Development Responsibilities

A. Authority

1. Secretarial Order No. 2948 holds BLM responsible for issuance of mineral leases, and holds U.S.G.S. responsible for lease operations. Thus, as to the Prototype Oil Shale Leasing Program, one school of thought presumes that BLM responsibility in Colorado will be fulfilled if and when leases are executed on Tracts C.a and C.b.

However, both Order No. 2948 and the terms of the Oil Shale leases require environmental input by BLM to mining/operating plans before being approved by U.S.G.S. Detailed development plans are required from oil shale lessees on or before the third anniversary of the leases.

Furthermore, Sec. 1(a)(2) of Order No. 2948 lays an additional two-fold responsibility on BLM, to wit: "Encourage the active development of mineral deposits in the leasable lands in a manner compatible with the uses of the same lands for other purposes; assure that mineral developers receive the acreage necessary for economic plant investment, development, and production." (Emphasis added.) Thus, if the Prototype Oil Shale Program is to succeed, BLM must arrange to accommodate ancillary and support facilities outside the lease as may be necessary, but in a manner that is compatible with existing and potential uses of those same lands. In fact, we contemplate oil shale leases on approximately 10,000 acres in Piceance Basin with development plans impacting all of northwest Colorado. Those off-site developments appear to be largely beyond the jurisdiction of USGS and lacking in detailed coverage in the Oil Shale Impact Statement.

2. The Secretary's plan for the Prototype Oil Shale leasing program makes it clear that BLM has continuing responsibility for issuance of permits and other entitlements to use, for surface resource management on national resource lands and for title clearance.

B. Systematic Program Support

Any right of way, permit, or other use authorization approved by BLM for the benefit of the Prototype Oil Shale Program must be provably consistent with NEPA in its own right, and in harmony with related needs for other development or uses in the region.

It is imperative that public land requirements for regional development needs be anticipated and accommodated in systematic rather than piecemeal fashion. Individual use authorizations must fit in the overall scheme of things or they may and should be enjoined. To this end, there is urgent and continuing need for cooperation and pooling of information by industry, local and state governments, and Federal agencies involved with oil shale and related developments. BLM is the logical coordinator and the BLM Planning System is the theoretical tool for the job. In practice though, the URA/MFP process cannot be refined or expanded quickly enough to accommodate fast-breaking development problems.

Colony Development Operation has a pending application for a 16-inch shale oil pipeline from their plant site on Parachute Creek to southwestern markets. Marathon Pipeline Company is working on an application for a 16-inch or larger oil pipeline from the Uintah Basin, across Colorado and Wyoming to eastern markets. Superior, Union, and Occidental Oil Companies are all working toward separate oil shale developments on private lands. How will their products be transported to what markets? These facts and questions must be in focus and resolved before approval can be given for a products pipeline to serve oil shale developments on Tract C.A. or C.b. Similar and equally serious attention will be required for powerlines, surface transportation systems, water facilities, space for urban and industrial development, etc., etc., for the whole region before any given right of way can be shown to be in the public interest.

BLM responsibilities include resolution of technical and economic problems, resource use conflicts, and environmental issues. For instance, spent shale disposal should not tie up an even greater volume of commercial grade shale; wild horse range should not be thoughtlessly destroyed; nor should incremental actions be allowed to dictate a course of irreparable environmental degradation. We still have the responsibility to act on applications under the public land laws, but NEPA, the public, and common sense all require that our basic orientation be to resources rather than to cases. If we passively respond to applications without a rational overall plan, volume of environmental reporting will grow while value of the effort shrinks. Injunctions will be inevitable, and unnecessary waste of resources and environmental values is bound to occur.

C. Compliance Supervision

Sound planning and honest environmental analysis and reporting are necessary but are not the end of our responsibility. Public involvement and support in those efforts is essential, but it follows that BLM has the responsibility for what actually happens on the ground. Failure to impose and enforce protective stipulations and reclamation requirements will negate the planning, reporting, and public support that were essential from the beginning.

In summary, BLM has a Motherhood role with relation to the National Resource Lands. It is we who will "raise the child" after rape or willing seduction of the land.

1. Defining National Goals
2. Organizing Planning
3. Establishing Compliance with RMA
4. Public Relations
5. Establishing Corridors
6. Establishing Pipelines
7. Forest Management & Watershed Plan
8. Wildlife Management Plan
9. Identify Land Acquisition & Secure Permitted
10. Other Title
11. Provide Environmental Impact by Mining Plans
12. Addressing Land Use & Management
13. Conduct Field Work & Data Collection
14. Monitor Operations & Conduct Compliance
15. Identify Data Gaps and Research Needs

V. Actions Required for Orderly & Timely Development

A. Develop Master Plan

1. Defining Regional Needs
2. Cooperative Planning
3. Systematic Compliance With NEPA
4. Public Relations

B. Establish Corridors

1. Products Pipelines
2. Power Transmission & Distribution Net
3. Surface Transportation System

C. Identify Land Boundaries & Assure Perpetuation

D. Clear Title

E. Provide Environmental Input to Mining Plans

F. Authorize Land Uses & Disposals

G. Conduct Field Work & EAR/EIS Reporting

H. Monitor Operations & Conduct Compliance Exams

I. Identify Data Gaps and Research Needs

V. Actions Required for Orderly & Timely Development

A. Develop Master Plan

A master plan to satisfy oil shale development needs is required if BLM is to provide the necessary public lands rights of way or have any resources left to manage. Specific duties incumbent upon BLM include:

1. Defining Regional Needs

We must get behind the veil of industry secrecy to find out who wants what facilities, where, within what time frame. Facilities for oil shale development must mesh with those existing or needed for other regional developments. If power needs for industrial and urban development will require more coal fired power plants, we should gain some notion of where the mines and power plants will be. Joint ventures and multi-purpose facilities can be encouraged to avoid inefficient or conflicting uses of land and resources. We must do enough missionary work to convince prospective right-of-way applicants that timely satisfaction of independent wants is no longer possible.

2. Cooperative Planning

BLM systems analysis and corridor designations must harmonize with evolving state and local action, as well as with other Federal programs in the region. Constant liaison will be required. To the extent possible, systems analyses will draw upon the BLM Planning System. If corridor designations are beyond the scope of existing MFP's, those designations and supporting data and analyses will serve as updates to Lands URA's and MFP decisions.

3. Systematic Compliance With NEPA

Umbrella EAR's/Environmental Statements on needed surface transportation net, pipeline/powerline corridors, industrial and urban development sites, etc., will be most responsive to NEPA. Those umbrellas should relate to the Oil Shale EIS, the Coal and Oil and Gas Programmatics, and other germane environmental reporting. If those are done right, supplemental EAR's on individual actions will only need to address unique hazards and special protective measures.

4. Public Relations

Oil shale is an emotional issue, so the general public and the conservation groups in particular will be looking closely

at all we do. Thus, BLM must assure maximum public awareness, involvement, and acquiescence in our methodology and decisions. Extra efforts will be made to obtain constant and candid media coverage of developments. We will also seek dialogue with the active conservation groups in the region, with the Oil Shale Environmental Advisory Panel, and with affected regional Council of Governments.

The message must be clear to all concerned that neither BLM nor Interior is making regional development decisions in a vacuum; and furthermore, that any plans made are flexible enough to respond to changing conditions and needs.

B. Establish Corridors

1. Products Pipelines

Production of shale oil from the Prototype leases will require BLM approval of one or more rights of way. Those tracts lie near the center of Piceance Basin which already has a maze of oil and gas pipelines. Private oil shale development proposals are along the north and south rims of the Basin. Thus, BLM must be concerned with major product transportation corridors in one or more directions out of the Basin and local proliferation of pipelines.

2. Power Transmission and Distribution Net

Whether power is required for oil shale development, e.g., 345 KV in the Gulf-Standard proposal, or power is the primary or byproduct of development, BLM will be under the gun to approve the necessary rights of way. It is immaterial whether the right-of-way applicant may be a lessee, another private operator, or a public agency or utility company. BLM must perform the staff work required by the right-of-way laws and NEPA. Systems analysis and corridor designation must provide the frame of reference for approval of any given powerline proposal.

3. Surface Transportation System

Corridors for new road and rail systems are largely fixed by terrain and existing transportation facilities in the region. However, since BLM controls most of the land area, it is incumbent upon us to assure that public and private access needs are accommodated without unnecessary impact on existing public resources on or off the public lands. Functional efficiency of the overall transportation system must be weighed against anticipated impacts on water quality, surface and subsurface resources, and aesthetics.

Although industrial and urban developments will generate needs for surface transportation facilities, siting of those developments may and should be influenced by the environmental costs of affording access.

C. Identify Land Boundaries & Assure Perpetuation

The land and property boundaries in the oil shale region vary from adequate section line control to total obliteration. Providing necessary boundary control for orderly development will require actions ranging from a limited reidentification of property lines in some areas to total reestablishment of the rectangular system in others. It is notable that the types of surveys and resurveys in this area do not meet a standard to support the leasing of lands which appear to be worth \$40,000 plus per acre. To properly support the leasing program, it is essential to make precision land surveys which meet the accuracy desired for issuing leases on lands with values approximating \$1.00 per square foot. In addition, it is essential that the boundaries between the public and the private lands be accurately identified now to avoid litigation or damage claims costing millions of dollars at a later date. Inadequate surveys may stall land transactions such as right of way, SLUP, exchange and trespass settlement, etc., required for oil shale development. Also, control will be needed for the identification of corridors necessary for other industries' operation. Upon the completion of certain types of mining operations, and to support the reclamation phase, adequate ground control must have been provided in advance to be able to restore property corner positions lost or obliterated during the above operations.

D. Clear Title

Since the beginning of the oil shale leasing program, BLM has been charged with the responsibility of mining claim title clearance work in the oil shale areas of Colorado, Utah and Wyoming. A special office was set up in 1969 under the Colorado State Director to perform this function. High priority was directed toward clearance of mining claims on the proposed lease sites in all three states. This work has essentially been completed. Future title clearance efforts will be shifted as required to accommodate development priorities, such as for rights of way for ancillary facilities, land exchanges, disposal areas and other off-site facilities. The work consists mainly of (1) determining the number, location and owner of mining claims in the area; (2) field investigations by qualified mining engineers to determine the validity of the claims and; (3) administrative legal processing (contests, hearings, appeals) to eliminate invalid claims.

The work is time consuming and requires considerable lead time in advance of development. Little relief is seen in expediting the work beyond present procedures unless (1) mining claim recordation procedures are approved by the Department or Congress and/or; (2) long-pending decisions on important oil shale test cases are rendered by IBLA.

In summary, we regard oil shale title clearance work as an integral part of the development program. The work is essential to proceeding in an orderly and timely manner in order to avoid costly delays due to injunctions or other litigation proceedings stemming from mining claimants who still have claims in the area. Our title clearance efforts will meet stiffer resistance in the future since claimants now feel that the high monetary value established at the first lease sale can be transferred to their claims. Many of the claimants are major oil companies who have the resources, expertise and incentive to resist or delay mining claim validity determination proceedings.

The importance of title clearance work is seen by reviewing the preliminary development plan of Standard/Gulf who obtained the first oil shale lease. The plan indicated that their plant facilities, disposal areas, water impoundments, pipelines and transmission lines would all be off-site. The off-site facilities depicted in their plan are located on some of the most difficult claims we have to work on. Title clearance work will be vital in order for development to proceed.

E. Provide Environmental Input to Mining Plans

Secretarial Order No. 2948 requires BLM to make environmental input to mining plans to be approved by U.S. Geological Survey. 43 CFR 23 and NEPA provide the basic policy and authority for fulfilling that requirement.

Mining plans for the prototype oil shale leases are required to be filed before the third anniversary of the lease. Operations are expected to continue for decades, and the short- and long-term impacts on the environment will be substantial. Moreover, the nature, extent, and severity of possible impacts are only dimly perceived at present. Techniques for reclamation or rehabilitation of mined areas and waste disposal sites are subjects of sheer speculation.

BLM must be prepared to make recommendations on design, siting, and operation of project features to avoid or minimize environmental damage. Some hazards and possible mitigating measures will be obvious. Devising a program of base line studies, basic research, and experimentation necessary to cope with the unknown offers a far greater challenge. We must meet that

challenge with all the energy and imagination available within a short-time frame. Moreover, regulatory procedures must be studied and modified as necessary to assure beneficial use of new knowledge or technology.

F. Authorize Land Uses and Disposals

Every use or disposal of the National Resource Lands involves a complex processing procedure. The most important administrative actions that are usually involved can be briefly summarized as follows:

1. Records notation and maintenance
2. Adjudication for compliance with appropriate laws and regulations, and corrective action as necessary
3. Solicitation of required reports and public comment
4. EAR and/or EIS reporting and review
5. Supplemental EAR reporting and review
6. Preparation of other required reports (land, mineral, etc.)
7. Issuance of Land Classification Decisions
8. Appraisal preparation and review
9. Grant, permit, or Patent Issuance
10. Construction supervision and compliance reports and review

We must take the above actions in an unquestionable and timely manner on all applications stemming from oil shale developments if a viable shale oil industry is to be developed. The requests will be complex and in many cases involve a novel precedent-setting approach. Since industry will not proceed without authorization or title, it is absolutely imperative that prompt administrative action is taken regarding their needs and requests.

A markedly increased workload is imminent, especially in the adjudicative and reporting areas. This heavy workload will involve requests for the following types of land uses or disposals of National Resource Lands:

1. Power transmission lines
2. Gas, oil and water pipelines

3. Sewer lines
4. Treatment plants
5. Water wells
6. Reservoirs
7. Airports
8. Railroads, roads and highways
9. Parks and recreation land
10. Sanitary landfills
11. New towns and expansion of existing towns
12. Business sites
13. Exchanges
14. Mining waste disposal areas
15. Core holing permits
16. Permits for environmental monitoring
17. Protective withdrawals
18. Revocations and Restorations
19. Sites for governmental uses and facilities

G. Conduct Field Work & EAR/EIS Reporting

District personnel will be required to spend a great deal of time in the field with applicants in determining locations and alignments of many proposed actions connected with the development of oil shale. We are already aware of several proposals concerning roads, pipelines, powerlines, transmission lines, reservoirs, waterlines, and administrative sites. Many other proposals will follow once development begins. Each proposal will require an "on the ground" inspection to determine feasibility and consideration of alternatives.

Environmental reporting can be reduced with the preparation of umbrella reports on "systems" rather than individual actions. For instance, the preparation of an umbrella on transportation corridors would preclude the need to prepare an EAR on each action proposed within that corridor. Supplemental reporting would suffice in most instances. Those actions that cannot be covered with umbrella reporting will require individual treatment. The number of proposed actions requiring individual treatment will be significant in developing oil shale.

H. Monitor Operations & Conduct Compliance Exams

One of the most important and time-consuming aspects of this program will be the monitoring of it for compliance. This will involve work on every type of grant or permit issued. On-the-ground expertise will be needed on a daily basis to monitor the program and respond to requests for revisions of right-of-way alignments, alternate waste disposal sites, rehabilitation plans, etc. Unless we respond timely and monitor closely, we will face criticism from all sides, thereby placing the program in jeopardy. In effect, we are "between a rock and hard place," i.e., if we don't respond to industry requests we'll be criticized and similar criticism will be received from the public if we do not closely monitor industry operations for compliance.

I. Identify Data Gaps and Research Needs

The following data gaps have been identified through on-going research and the BLM planning system. To meet the objectives of the Oil Shale development program and to mitigate environmental degradation additional data is needed on the following subjects:

1. Detailed Soil Surveys

Soils data in the Basin is practically nonexistent. That which is available is not adequate to make reliable interpretations. As a minimum we need good data on the areas already identified for near-future development. The information is critical for determining feasibility of revegetation and rehabilitation plans, placement of disposal areas, handling of overburden and topsoil, etc. The information should be available before soil disturbance occurs.

2. Plot Tests

Seed and seedlings tests should be conducted on representative sites of all important native plants to determine the best methods for reestablishing them.

3. Seed & Seedlings Source Investigations

Consideration should be given to contracting or establishing nurseries to assure a continuing and adequate supply of native plants.

4. Hydrology

Continuing hydrological investigations and monitoring system should be established to assess the impact of oil shale development on the hydrology of the Basin and the Colorado River System. This should include baseline studies

on toxicology and quality from which changes could be measured.

5. Leaching Methods and Water Requirements

Research is needed to determine the most efficient leaching methods for spent shale and minimum water requirements.

6. Spent Shale Disposal Areas

Data is needed on the placement and design of spent shale disposal areas. Should concentrate on water control to prevent erosion.

7. Wildlife

Additional information is needed on the impact of development on the Piceance Creek Basin mule deer herd and other wildlife in the area.

8. Air Pollution

Very little work has been done regarding air pollution from plant sites. Research is needed to determine best sites for plant locations.

9. Revegetation of Surface Soils

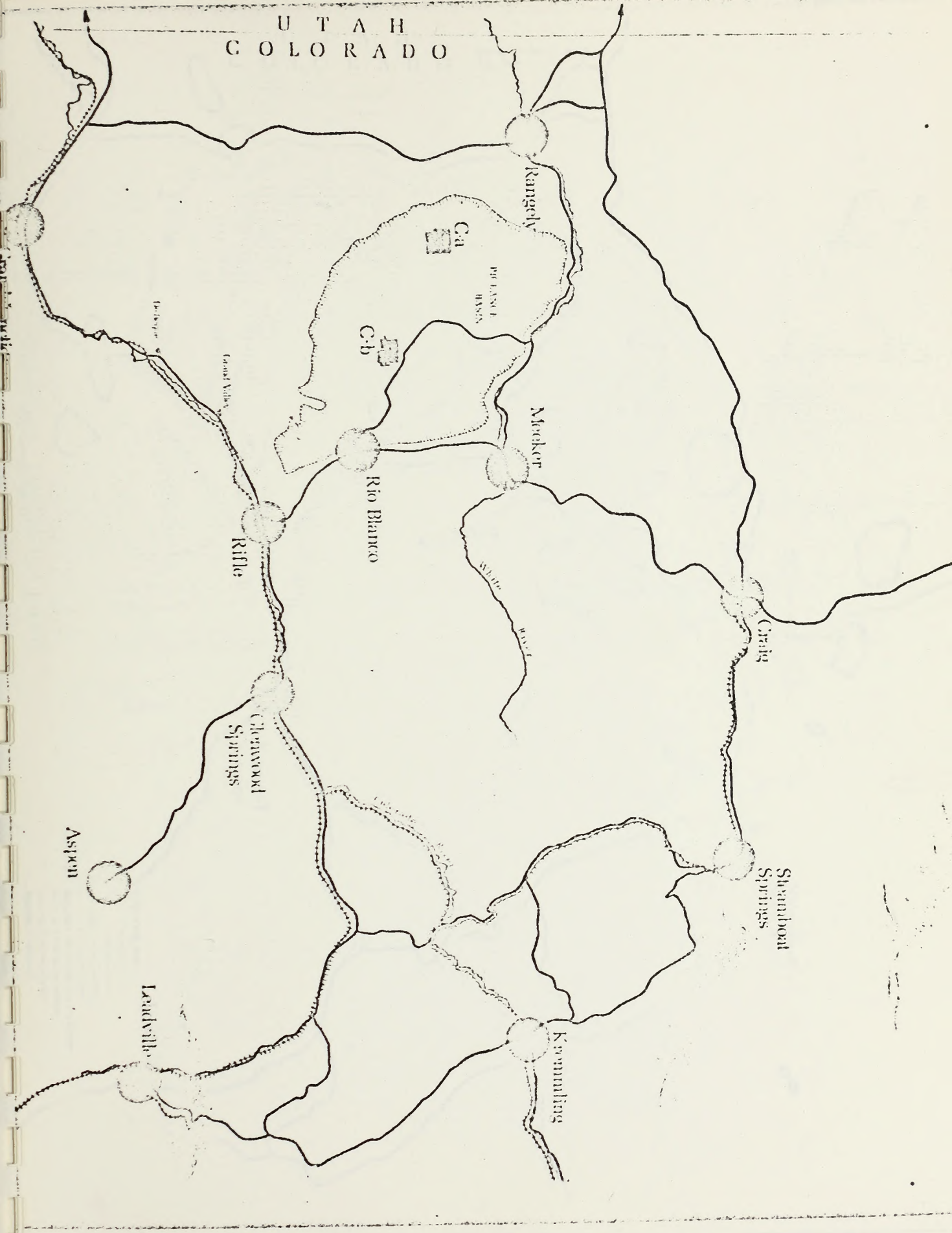
Large areas of the surface will be disturbed through mining and installation of ancillary facilities. Research in revegetation methods should be conducted on all major vegetative ecosystems for soil protection and habitat improvement, including wildlife habitat.

10. Socio-Economic

In order to properly assess the social, economic, and environmental impacts of oil shale and coal development on the region, the recommendation is made that an intensive multidisciplinary study be funded, to evaluate in detail, on a sector-by-sector basis, the economic structure of the region. The disturbing influences (mineral or other developments), as they are determined or quantified, could then be introduced into the regional model. From the output, socio-economic and environmental consequences (sewage load, air pollution produced, etc.) would be determined with implementation plans developed to accommodate the impacts (new city sewer plants, air pollution control equipment, etc.). Recommendations to local communities regarding alternative procedures for coping with all of the social impacts (housing, provision of services, expansion of support or service facilities, etc.) could also be developed and evaluated.

The above should not be construed as an all-inclusive list.
We have identified only the important gaps which have thus
far become obvious.

U T A H
C O L O R A D O



[illegible][illegible]

UTAH
COLORADO

Grand Staircase-Escalante National Monument

Aspen
Spruce-fir forest
Pine forest
Baldy
Lush forest area
Baldy forest area

Map of the Grand Staircase-Escalante National Monument area, showing the boundary of the monument and surrounding regions. The map includes a legend in the bottom left corner defining symbols for various forest types and geographical features. The map is oriented with North at the top.

UTAH
COLORADO

Grand Staircase-Escalante National Monument

Aspen
Spruce-fir forest
Pine forest
Baldy
Lush forest area
Baldy forest area

Map of the Grand Staircase-Escalante National Monument area, showing the boundary of the monument and surrounding regions. The map includes a legend in the bottom left corner defining symbols for various forest types and geographical features. The map is oriented with North at the top.

UTAH
COLORADO

Grand Staircase-Escalante National Monument

Aspen

Spruce-fir forest

Pine forest

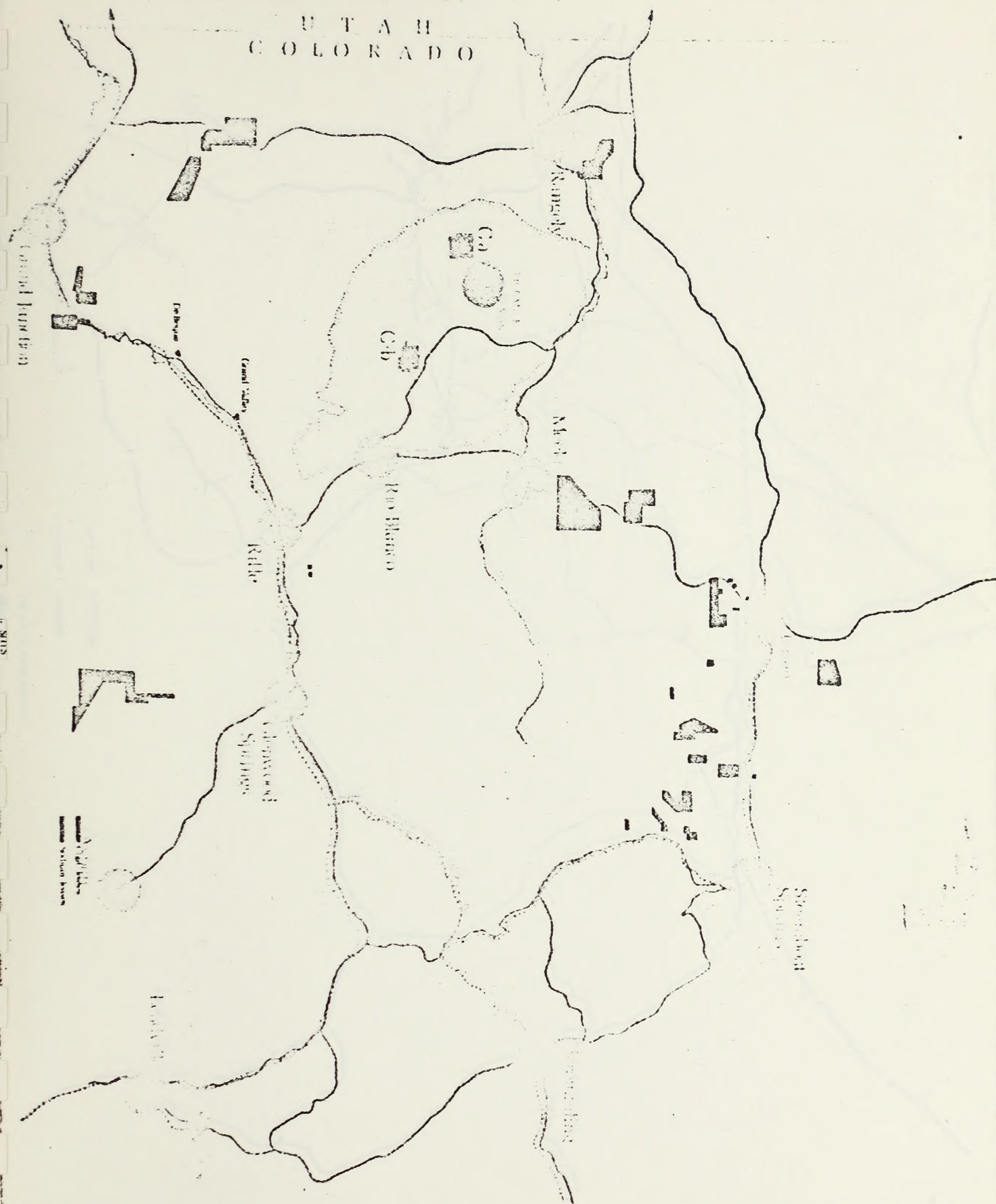
Balsam poplar forest

Balsam poplar forest and aspen

Balsam poplar forest and spruce-fir forest

Balsam poplar forest and balsam poplar forest

UTAH
COLORADO



UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

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San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

Montezuma

San Juan

Legend:

- OVERLINE
- POTENTIAL

Scale: 0 10 20 MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

La Jolla

Overline

Potential

MILES

UTAH
COLORADO

San Juan River

Montezuma Creek

Montezuma Arch

San Juan Arch

Aspen

La Jolla

Overline

Potential

MILES

UTAH
COLORADO

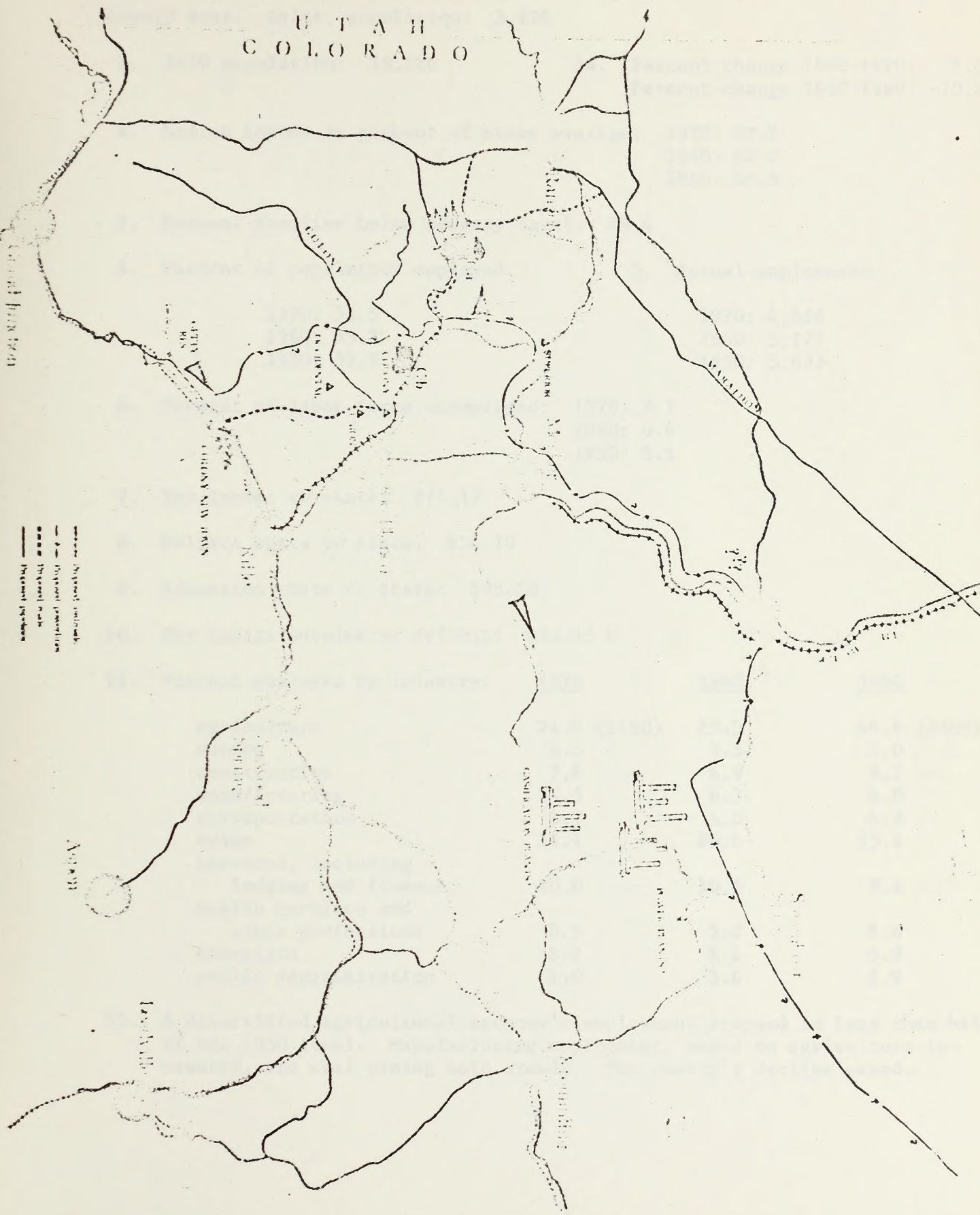
San Juan
Montezuma
Cortez
Blanding
Tropic
Blanco
Cortez
Blanding
Tropic
Blanco
Cortez
Blanding
Tropic
Blanco

OVERLINE
POTENTIAL

OIL & GAS INFORMATION
DRILL SITES

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UTAH COLORADO



Boundary of territory
 Boundary of county
 Boundary of town
 Boundary of section

DELTA COUNTY

County Seat: Delta; population: 3,694

1. 1970 population: 15,286
 - 1a. Percent change 1960-1970: -2.0
Percent change 1950-1960: -10.2
2. Median income as percent of state average: 1970: 62.2
1960: 62.7
1950: 62.9
3. Percent families below poverty level: 19.4
4. Percent of population employed:

1970: 31.5
1960: 33.2
1950: 33.9
5. Actual employment:

1970: 4,856
1960: 5,177
1950: 5,893
6. Percent of labor force unemployed: 1970: 7.1
1960: 6.4
1950: 5.1
7. Tax income to state: \$74.17
8. Welfare costs to state: \$34.10
9. Education costs to state: \$65.20
10. Per capita surplus or deficit: \$25.13 D
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	21.8 (1160)	29.0	44.0 (2600)
mining	4.5	3.5	4.0
construction	7.8	6.9	8.2
manufacturing	9.5	6.3	4.0
transportation	5.7	5.0	4.7
trade	19.1	20.6	15.1
services, including			
lodging and finance	10.0	10.5	9.6
health services and			
other professions	8.5	5.7	2.6
education	8.7	6.2	3.9
public administration	4.0	3.6	2.9
12. A diversified agricultural economy's employment dropped to less than half of its 1950 level. Manufacturing employment, based on agriculture increased, and coal mining held steady. The county's decline eased.

EAGLE COUNTY

County Seat: Eagle; population: 790

1. 1970 population: 7,498
 - 1a. Percent change 1960-1970: +60.3
Percent change 1950-1960: +4.2
2. Median income as percent of state average: 1970: 90.4
1960: 76.9
1950: 90.5
3. Percent families below poverty level: 7.6
4. Percent of population employed:

1970: 40.7
1960: 35.6
1950: 37.4
5. Actual employment:

1970: 3,050
1960: 1,665
1950: 1,678
6. Percent of labor force unemployed: 1970: 4.7
1960: 1.3
1950: 3.6
7. Tax income to state: \$137.26
8. Welfare costs to state: \$6.28
9. Education costs to state: \$39.49
10. Per capita surplus or deficit: \$91.49 S
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	7.4 (227)	15.1	27.5 (457)
mining	11.8 (361)	26.8	22.1 (370)
construction	14.5 (443)	5.5	4.8 (80)
manufacturing	2.6	5.0	4.3
transportation	7.0	9.3	11.4
trade	18.5	14.8	12.0
services, including			
lodging and finance	24.7 (756)	7.0	7.1 (120)
health services and			
other professions	4.2	1.9	1.7
education	4.4	7.9	4.1
public administration	4.3	3.4	4.6
12. Agricultural employment halved, mining was stable, and construction and recreation services (at Vail) boomed this economy.

County Seat: Glenwood Springs; population: 4,106

County Seat: Glenwood Springs; population: 4,106

2. Median income as percent of state average: 1970: 87.7
1960: 90.3
1950: 90.4

3. Percent families below poverty level: 8.4

4. Percent of population employed:

1970: 39.6
1960: 37.5
1950: 37.8

5. Actual employment:

1970: 5,865
1960: 4,501
1950: 4,389

6. Percent of labor force unemployed: 1970: 4.8
1960: 7.7
1950: 3.1

7. Tax income to state: \$138.22

8. Welfare costs to state: \$13.57

9. Education costs to state: \$62.88

10. Per capita surplus or deficit: \$61.77 S

- | 11. Percent employed by industry: | 1970 | 1960 | 1950 |
|-----------------------------------|-------------|------|-------------|
| agriculture | 19.5 (598) | 17.1 | 30.1 (1156) |
| mining | 6.7 (395) | 11.6 | 5.3 (231) |
| construction | 11.5 (678) | 8.3 | 9.0 (394) |
| manufacturing | 2.8 (166) | 2.7 | 5.9 (257) |
| transportation | 6.8 | 5.7 | 6.4 |
| trade | 23.7 (1395) | 20.3 | 17.4 (469) |
| services, including | | | |
| lodging and finance | 16.8 (989) | 12.8 | 12.3 (444) |
| health services and | | | |
| other professions | 9.6 | 6.2 | 3.5 |
| education | 7.8 (462) | 5.7 | 4.0 (172) |
| public administration | 4.3 | 4.8 | 4.1 |

12. Agricultural employment (livestock) was halved 1950-1960. Mining employment (coal and uranium) first rose sharply and then fell slightly in the 60's (and more in the early 70's). Tourism and education furnished substantial growth in the 1960's.

County Seat: Grand Junction; population: 20,170

- | | | | |
|---|--|-------------------------------|--|
| 1. 1970 population: | 54,374 | 1a. Percent change 1960-1970: | +7.2 |
| | | Percent change 1950-1960: | +30.1 |
| 2. Median income as percent of state average: | 1970: 84.4
1960: 92.9
1950: 86.2 | | |
| 3. Percent families below poverty level: | 11.4 | | |
| 4. Percent of population employed: | 1970: 37.0
1960: 35.2
1950: 34.5 | 5. Actual employment: | 1970: 20,125
1960: 17,841
1950: 13,427 |
| 6. Percent of labor force unemployed: | 1970: 5.4
1960: 6.0
1950: 5.4 | | |
| 7. Tax income to state: | \$110.17 | | |
| 8. Welfare costs to state: | \$22.10 | | |
| 9. Education costs to state: | \$59.18 | | |
| 10. Per capita surplus or deficit: | \$28.89 S | | |
| 11. Percent employed by industry: | <u>1970</u> | <u>1960</u> | <u>1950</u> |
| agriculture | 7.3 (1474) | 11.4 | 22.0 (2926) |
| mining | 2.3 (468) | 5.5 | 2.0 (275) |
| construction | 6.2 (1561) | 7.6 | 9.2 (1233) |
| manufacturing | 10.1 (2041) | 6.7 | 4.7 (636) |
| transportation | 9.8 (1980-479) | 9.7 | 12.6 (1694) |
| trade | 21.3 | 21.5 | 20.1 |
| services, including | | | |
| lodging and finance | 13.3 | 13.3 | 12.4 |
| health services and | | | |
| other professions | 12.6 (2539) | 9.0 | 5.8 (773) |
| education | 10.0 (2023) | 6.5 | 4.4 (586) |
| public administration | 5.2 | 5.8 | 4.6 (620) |
| 12. Mesa County's diversified agricultural employment has declined to half its 1950 level. A 1950's uranium boom has dwindled. Railroad employment has halved. Notwithstanding this, there has been solid growth in manufacturing and in regionally-sold health and educational services to maintain a healthy economy. | | | |

County Seat: Craig; population: 4,205

1. 1970 population: 6,525
 - 1a. Percent change 1960-1970: -7.6
 - Percent change 1950-1960: 18.8
2. Median income as percent of state average: 1970: 85.0
1960: 102.4
1950: 113.1
3. Percent families below poverty level: 12.4
4. Percent of population employed:

1970: 39.5
1960: 38.0
1950: 39.5
5. Actual employment:

1970: 2,503
1960: 2,686
1950: 2,348
6. Percent of labor force unemployed: 1970: 5.1
1960: 5.8
1950: 4.4
7. Tax income to state: \$112.66
8. Welfare costs to state: \$12.43
9. Education costs to state: \$56.00
10. Per capita surplus or deficit: \$54.23 S
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	14.0 (351)	14.8	26.9 (631)
mining	4.9 (124)	14.9 (405)	8.5 (200)
construction	11.7	9.7	9.1
manufacturing	1.6	3.7	3.4
transportation	7.3	6.4	7.9
trade	25.0	21.7	20.3
services, including			
lodging and finance	13.8	12.2	12.8
health services and			
other professions	7.9 (198)	4.3	1.9 (45)
education	7.9 (199)	6.0	3.7 (86)
public administration	5.4	3.5	4.2
12. In the 1950's increasing mining employment generated growth in the face of declining agricultural (sheep) employment; in the 1960's mining declined (mostly in uranium) although services held up well. Relative income declined. In the early 1970's coal mining employment prospects are favorable.

County Seat: Aspen

1. 1970 population: 6,185
 - 1a. Percent change 1960-1970: 159.8
Percent change 1950-1960: 44.7
2. Median income as percent of state average: 1970: 123.1
1960: 104.7
1950: -
3. Percent families below poverty level: 5.7
4. Percent of population employed:

1970: 46.0
1960: 43.7
1950: 38.8
5. Actual employment:

1970: 2,847
1960: 1,040
1950: 639
6. Percent of labor force unemployed: 1970: 6.9
1960: 7.2
1950: 7.0
7. Tax income to state: \$276.60
8. Welfare costs to state: \$4.49
9. Education costs to state: \$16.11
10. Per capita surplus or deficit: \$256.00 S
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	5.5 (157)	9.1	28.2 (179)
mining	2.0 (57)	1.1	3.6 (22)
construction	9.6 (276)	8.2	8.6 (55)
manufacturing	2.0	2.3	3.0
transportation	2.9	4.0	4.5
trade	22.6 (646)	18.6	13.6 (87)
services, including			
lodging and finance	36.3 (1036)	32.6	23.0 (147)
health services and			
other professions	9.8	11.4	5.3
education	3.6	4.6	3.6
public administration	5.1	4.0	5.0
12. An economic boom has been supported by tourism and tourism-based construction. Relative per family income declined appreciably as tourism became the specialized source of economic activity. The state tax surplus per capita was the largest of any county.

RIO BLANCO COUNTY

County Seat: Meeker

1. 1970 population: 4,842
- 1a. Percent change 1960-1970: -6.0
Percent change 1950-1960: +9.1
2. Median income as percent of state average: 1970: 83.8
1960: 101.9
1950: 110.9
3. Percent families below poverty level: 10.1
4. Percent of population employed:
1970: 40.2
1960: 39.1
1950: 37.2
5. Actual employment:
1970: 1,946
1960: 2,013
1950: 1,754
6. Percent of labor force unemployed: 1970: 2.1
1960: 4.2
1950: 4.3
7. Tax income to state: \$89.45
8. Welfare cost to state: \$9.09
9. Education cost to state: \$35.19
10. Per capita surplus or deficit: \$45.17 S
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	15.1 (294)	16.4	26.3 (456)
mining	14.3 (280)	19.9 (401)	21.8 (393)
construction	7.8	7.7	9.3
manufacturing	2.1	2.3	2.1
transportation	4.8	7.7	6.3
trade	13.9	12.2	12.8
services, including			
lodging and finance	12.3	13.8	10.4
health services and			
other professions	9.5 (185)	4.2	1.7 (30)
education	11.9 (233)	5.3	4.0 (71)
public administration	7.8	4.0	4.4
12. Oil and gas employment held up well enough in the 50's to support growth in the face of declining livestock-production employment. With continued agricultural decline and a fall-off in oil and gas, the county declined slightly in the 60's in spite of rapid increases in education, and health services employment. Relative income was down rather steeply 1950-1970.

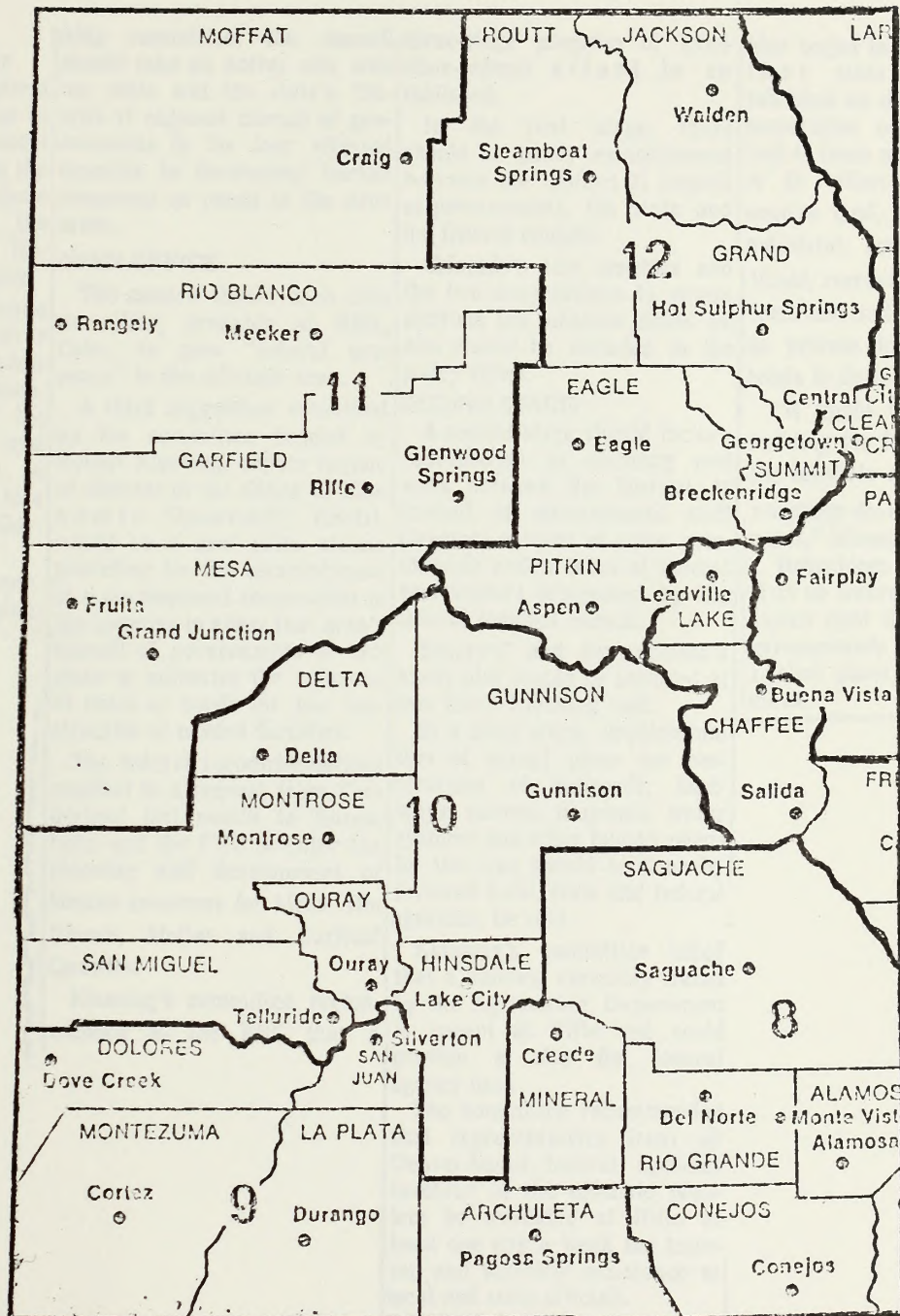
ROUTT COUNTY

County Seat: Steamboat Springs

1. 1970 population: 6,592
- 1a. Percent change 1960-1970: +11.7
Percent change 1950-1960: -34.0
2. Median income as percent of state average: 1970: 78.4
1960: 78.1
1950: 95.5
3. Percent families below poverty level: 12.9
4. Percent of population employed:
1970: 38.3
1960: 33.9
1950: 34.9
5. Actual employment:
1970: 2,527
1960: 2,000
1950: 3,117
6. Percent of labor force unemployed: 1970: 3.2
1960: 5.3
1950: 7.3
7. Tax income to state: \$118.40
8. Welfare costs to state: \$12.94
9. Education costs to state: \$57.78
10. Per capita surplus or deficit: \$47.68 S
11. Percent employed by industry:

	<u>1970</u>	<u>1960</u>	<u>1950</u>
agriculture	14.3 (362)	25.3 (500)	28.3 (868)
mining	6.9 (175)	9.3 (182)	19.4 (605)
construction	9.1	6.3	5.3
manufacturing	3.7	3.1	3.4 (105)
transportation	9.0 (-28)	6.8	7.6 (236)
trade	21.4	16.0	14.2
services, including lodging and finance	15.2	11.6	11.5
health services and other professions	4.3	3.7	2.4
education	11.3 (288)	9.0	4.5 (141)
public administration	4.3	3.8	2.9
12. In the 50's, coal mining employment fell sharply, as did that from agriculture (predominantly livestock). Relative income also fell sharply. In the 60's, tourism-related trade and services and - more recently - construction all grew, and so did education. In the early 70's, a full-fledged tourism and construction boom was on, accompanied by intensive land development.

WESTERN COLORADO STATE PLANNING DISTRICTS



Regional Council Given Resources Tips

By JOHN TOOHEY

Denver Post Staff Writer

Three suggestions for federal participation and cooperation in human-resources development in northwestern Colorado in the face of an expected oil-shale boom were laid before the Mountain-Plains Federal Regional Council (FRC) Tuesday.

The council, which is made up of nine cabinet or executive office agencies, agreed to allow its chairman, Robert Rosenheim, regional director of the Department of Housing and Urban Development (HUD), to carry the recommendations to a meeting Wednesday with Gov. John Vanderhoof.

According to the recommendations from the FRC's plan-

ning committee, the council should take an active role with the state and the state's District 11 regional council of governments in the four affected counties in developing human resources as needs in the area arise.

OPEN OFFICE

The council should open also an office, probably at Rifle, Colo., to gain "federal presence" in the oil-shale area.

A third suggestion submitted by the committee headed by Robert Klausing, deputy regional director of the Office of Economic Opportunity (OEO), would be a new state statute providing for the establishment of a development corporation in the counties to allow that area's council of governments or the state to authorize the issuance of notes or bonds for the construction of needed facilities.

The federal recommendations resulted in a request from Vanderhoof last month to Rosenheim and the FRC to enter the planning and development of human resources for Mesa, Rio Blanco, Moffat and Garfield Counties.

Klausing's committee recommended to the FRC that a

three-stage program of local-state-federal effort be established.

In the first stage, there should be policy establishment between the District 11 council of governments, the state and the federal council.

Colorado's two senators and the two congressmen in whose districts the oil-shale fields lie also should be included in the policy effort.

SECOND STAGE

A second stage should include coordination in planning and work between the District 11 council of governments staff director, a team of state coordinators and a team of federal coordinators designated by the federal regional council.

Senators' and congressmen's staffs also should be included at this level, Klausing said.

In a third stage, implementation of actual plans for construction of railroads, highways, sewers, hospitals, water systems and other human needs for the area should be done by involved local, state and federal agencies, he said.

Klausing's committee noted that a building currently leased by the Agriculture Department is vacant at Rifle and could provide a site for federal agency uses.

The committee recommended that representatives from all Denver-based federal agencies involved in the oil-shale problem be available at Rifle at least one day a week for training and technical assistance to local and state officials.

DONATE CLERK

OEO, Klausing said, is willing to donate the use of a clerk to help run the Rifle office if the idea is accepted.

Klausing referred also to an

idea begun in New York where that state legislature established an urban development corporation which was authorized to issue notes and bonds up to \$1 billion to allow it to acquire land, build residential, industrial, commercial, educational, recreational and cultural facilities; sell or lease projects to private investors and sell bonds to finance projects.

"It might be one means of building the facilities needed in the oil-shale area as new communities develop and others expand," Klausing said.

Rosenheim noted, however, that no federal action should be taken until the local council of governments and the state establish plans for such development.

Form 1279-3
(June 1984)

BORROWER

HD 9567 .C7 C65

Colorado oil shale in

DATE LOANED	BORROWER

USDI - BLM

